

NEW SYNONYMY AND NEW SPECIES OF AMERICAN BARK BEETLES (COLEOPTERA: SCOLYTIDAE), PART III¹

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ABSTRACT.—New synonymy is proposed as follows: *Metacorthylus* Blandford (= *Paracorthylus* Wood). *Corthylus spinifer* Schwarz (= *Corthylus tomentosus* Schedl). *Cryptocarinus brevicollis* Eggers (= *Cryptocarenum coronatus* Wood). *Dendrocranulus guatemalensis* (Hopkins), n. comb. (= *Dendrocranulus parallelus* Schedl). *Dendroterus mexicanus* Blandford (= *Conophthocranulus umbratus* Schedl). *Hypothenemus cylindricus* (Hopkins) (= *Hypothenemus guadeloupensis* Schedl). *Hypothenemus erectus* LeConte (= *Stephanoderes discedens* Schedl). *Hypothenemus javanus* (Eggers) (= *Stephanoderes pistor* Schedl). *Stephanoderes prosper* Schedl). *Xyleborus pseudotenuis* Schedl (= *Xyleborus tenuis* Schedl), and *Xyleborus villosulus* Blandford (= *Xyleborus coccotrypoides* Eggers, *villosus* Schedl). *Scolytodes punctiferus* n. n. is proposed for *Scolytodes punctifer* Wood, 1971 (nec Wood 1969). The following species are named as new to science: *Amphicranus argutus*, *A. fulgidus*, *A. micans*, *Pityophthorus inops*, *P. debilis*, *P. strictus*, *P. galeritus*, *P. sobrinus*, *P. lactus*, *P. lenis*, *P. conspectus*, *P. medialis* (Costa Rica), *P. perexiguus* (Costa Rica and Panama), *P. scitulus* (Panama), *P. costatulus*, *P. costabilis*, *P. detentus*, *P. nebulosus*, *P. melanurus*, *P. indigenus*, *P. burserae*, *P. molesus*, *P. diligens*, *P. corruptus* (Mexico), *P. tenax*, *P. nugalis*, *P. minutalis* (Guatemala), *P. nemoralis*, *P. morosus*, *P. hermosus* (Honduras), *Araptus gracilens* (Mexico).

On the following pages several newly discovered cases of synonymy and species new to science are presented for American Scolytidae. The species new to science represent the genera *Amphicranus* (3), *Pityophthorus* (27), and *Araptus* (1), and they represent the following countries: Mexico (11), Guatemala (3), Honduras (3), Costa Rica (12), Panama (1), Costa Rica and Panama (1).

NEW SYNONYMY

Metacorthylus Blandford

Metacorthylus Blandford, 1904. Biol. Centr. Amer., Coleopt. 4(6):263 (Type species: *Metacorthylus nigripennis* Blandford, monobasic). *Paracorthylus* Wood, 1968, Great Basin Nat. 28:7 (Type-species: *Paracorthylus velutinus* Wood, original designation). *New synonymy*

When *Paracorthylus* was named, I was familiar only with species subsequently placed in *Metacorthylus* by authors other than Blandford. It is now established that those species are in no way allied to Blandford's genus. *Paracorthylus velutinus* Wood, the type species of *Paracorthylus*, is rather unlike *Metacorthylus nigripennis* Blandford, the type species of *Metacorthylus*. However, *concisus* (Wood) and *mutilus* (Wood) fill the character gap between these genera to such an extent that *Paracorthylus* should be placed in synonymy.

Corthylus spinifer Schwarz

Corthylus spinifer Schwarz, 1891, Proc. Ent. Soc. Washington 2:114 (Syntypes, females; Key West, Florida; U.S. Nat. Mus.)

Corthylus tomentosus Schedl, 1940, An. Esc. Nac. Cienc. Biol., Mexico 1:350 (Syntypes, females; Tuxtepec in Oaxaca and Ixtapa in Nayarit, Mexico; Schedl and Dampf colls.). *New synonymy*

The syntypes of *Corthylus spinifer* Schwarz in the U.S. National Museum and one female syntype of *C. tomentosus* Schedl in the Schedl collection were compared directly to my series of this species. Only one common species is represented by these names.

Cryptocarenum brevicollis Eggers

Cryptocarenum brevicollis Eggers, 1937, Rev. de Ent. 7:81 (Holotype, female; Cochabamba, Bolivia; deposited in but not now in the Eggers Collection, apparently on loan to Schedl). *Cryptocarenum coronatus* Wood, 1971, Brigham Young Univ. Sci. Bull., Biol. Ser. 15(3):36 (Holotype, female; 20 km SW El Vigia, Merida, Venezuela; Wood Coll.). *New synonymy*

The female holotypes of *brevicollis* Eggers and *coronatus* Wood were compared directly to one another and to several other specimens from Venezuela. The frons of *brevicollis* is less strongly impressed, and the epistomal process and dorsolateral rugae are much larger and more closely placed than in *coronatus*. The pronotal and elytral punctures are

¹Part of this research was sponsored by the National Science Foundation.

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smaller than in *coronatus*, and the declivital vestiture is apparently less abundant. In spite of these minor differences they are considered to represent the same species.

Dendrocranulus guatemalensis
(Hopkins)

Xylocleptes guatemalensis Hopkins, 1915, U.S. Dept. Agric. Rept. 99:44 (Holotype, female; Panzos, Guatemala; U.S. Nat. Mus.)

Dendrocranulus parallelus Schedl, 1938, Archiv Naturgesch. 7:172 (Holotype, sex?; Tres Rivières, Guadeloupe; U.S. Nat. Mus.). *New synonymy*

The holotypes of *guatemalensis* Hopkins and *parallelus* Schedl were both compared to my series from La Lima, Honduras. Although the head of the *guatemalensis* type is lost, sufficient other reliable characters are available for use so as to remove all doubt as to the identity of these specimens. Only one species is represented by these names.

Dendroterus mexicanus Blandford

Dendroterus mexicanus Blandford, 1904, Biol. Centr. Amer., Coleopt. 4(6):233 (Holotype, female; Tehuantepec, Oaxaca, Mexico; British Mus. Nat. Hist.)

Conophthorcranulus umbratus Schedl, 1937, Arch. Inst. Biol. Veget. 3:168 (Holotype, female; Mexico; Schedl Coll.). *New synonymy*

The female holotypes of *Dendroterus mexicanus* Blandford and *Conophthorcranulus umbratus* Schedl were both compared directly to my series of 119 specimens from various localities in Mexico. Although both antennae have been removed from the type of *umbratus* and it is slightly smaller than average, there is no doubt as to the synonymy of the two names. Schedl has also cited *umbratus* in his genus *Chiloxylon*.

Hypothenemus cylindricus Hopkins

Stephanoderes cylindricus Hopkins, 1915, U.S. Dept. Agric. Rept. 99:25 (Holotype, female; Trece Aguas, Alta Verapaz, Guatemala; U.S. Nat. Mus.)

Hypothenemus guadeloupensis Schedl, 1951, Dusenía 2:98 (Syntypes, female; Guadeloupe, Val Canard; Schedl Coll.). *New synonymy*

The female holotype of *Stephanoderes cylindricus* Hopkins and a female syntype from the Schedl Collection and bearing a red label marked "Type" were ex-

amined and compared to my series. All represent the same species.

Hypothenemus erectus LeConte

Hypothenemus erectus LeConte, 1876, Proc. Amer. Philos. Soc. 15:356 (Lectotype, female; Texas; Mus. Comp. Zool., designated by Wood, 1972, Great Basin Nat. 32:45)

Stephanoderes discedens Schedl, 1950, Bull. Instit. Roy. Sci. Nat. Belgique 26(50):23 (Holotype, female; St. Thomas; Schedl Coll.). *New synonymy*

The female holotype of *Stephanoderes discedens* Schedl was compared to my series of *Hypothenemus erectus* LeConte that previously had been compared by me to the lectotype. Although the Schedl specimen is badly rubbed, it clearly is of *erectus*. The type locality of *discedens* is given as St. Thomas. It is not known if this refers to the city or island of this name in the Virgin Islands, to the town or bay in Jamaica (all of which are within the known distributional range of *erectus*), or to some other locality.

Hypothenemus javanus (Eggers)

Stephanoderes javanus Eggers, 1908, Ent. Blätt. (Lectotype, female; Java; U.S. Nat. Mus., designated by Anderson and Anderson, 1971, Smithsonian Contrib. Zool. 94:16)

Stephanoderes pistor Schedl, 1951, Dusenía 2:102 (two syntypes, females; Havana, Cuba; Schedl Coll.). *New synonymy*

Stephanoderes prosper Schedl, 1951, Dusenía 2:103 (Holotype, female; Guadeloupe; Schedl Coll.). *New synonymy*

The female holotypes of *Stephanoderes javanus* Eggers and *prosper* Schedl and a female syntype of *pistor* Schedl were all compared by me to my series of this species. All clearly represent the same species; consequently, *prosper* and *pistor* must be placed in synonymy.

Scolytodes punctiferus, new name

Scolytodes punctifer Wood, 1971 (nec Wood, 1969), Brigham Young Univ. Sci. Bull., Biol. Ser. 15(3):15 (Holotype, male; Volcan Irazu, Cartago, Costa Rica; Wood Coll.)

When *Scolytodes punctifer* Wood, 1971, cited above, was named, the fact was overlooked that the name was pre-occupied by *S. cecropiavorus punctifer* Wood (1969, Brigham Young Univ. Sci. Bull., Biol. Ser. 10(2):18). The new name *Scolytodes punctiferus* is proposed

as a replacement for the 1971 junior homonym.

Xyleborus pseudotenuis Schedl

Xyleborus pseudotenuis Schedl, 1936, Arch. Inst. Biol. Veget. 3:109 (Holotype, female; Brazil; Schedl Coll.).

Xyleborus tenuis Schedl, 1949, Rev. Brasil Biol. 9:269 (Holotype, female; Cordova, presumably Mexico; Schedl Coll.). *New synonymy*

This species occurs from central Mexico to Brazil. Series from Mexico to Venezuela are variable in the size of the interstitial declivital denticles. Some series from the northern areas include predominantly specimens in which about two to four denticles are distinctly larger than the remaining denticles. Up to half of some series from Costa Rica and southward have these tubercles of approximately subequal small size. The holotype of *pseudotenuis* Schedl, from Brazil, is of the latter form, the holotype of *tenuis* Schedl is of the former structure. Since the two forms intergrade within series from all areas for which adequate material is available for study, the name *tenuis* must be placed in synonymy.

Xyleborus exilis Schedl (1934, Ent. Blätt. 30:209), from Costa Rica, may also be of this species. It has the elytral declivity slightly steeper than normal for this species, but it is identical in other respects. Additional material should be examined before synonymy for this name is accepted.

Xyleborus villosulus Blandford

Xyleborus villosulus Blandford, 1898, Biol. Centr. Amer., Coleopt. 4(6):204 (Holotype, female; Río Naranjo, San Marcos, Guatemala; British Mus. Nat. Hist.).

Xyleborus coccotrypoides Eggers, 1943, Mitt. Münchner Ent. Ges. 33:388 (Holotype, female; Cochabamba, Bolivia; Paris Mus.) *New synonymy*

Xyleborus villosus Schedl, 1949, Rev. Brasil Biol. 9:270 (Syntypes, female; Nova Teutonia, Brazil; Schedl and Plaumann colls.). *New synonymy*

The holotypes of *villosulus* Blandford and *coccotrypoides* Eggers were both compared directly to my specimens from Guatemala and Venezuela. All represent the same species. Schedl (personal communication) indicated that *villosus* Schedl is also synonymous with *coccotrypoides*.

SPECIES NEW TO SCIENCE

Amphicranus argutus, n. sp.

This species is remotely allied to *melanura* (Blandford) but is distinguished by the much smaller size and by the very different female frons and elytral declivity as described below.

Female.—Length 2.2 mm, 3.0 times as long as wide; color dark reddish brown.

Frons convex above, a weak transverse impression between upper level of eyes and epistoma; epistoma weakly developed on median fourth; surface reticulate, punctures very small, shallow, not close; vestiture limited to epistomal margin. Antennal club 1.3 times as long as scape, 1.5 times as long as wide; tuft of hair on posterior face absent.

Pronotum 1.5 times as long as wide; sides straight on posterior two-thirds; indefinite summit on anterior fourth; anterior slope arising vertically from anterior margin to transverse costa, then gradual to summit, asperities broad, low, their anterior limit marked by a serrate costa near submarginal costa; posterior areas reticulate, fine, shallow punctures clearly marked. Glabrous.

Elytra 1.6 times as long as wide, 1.1 times as long as pronotum; sides straight and parallel on basal four-fifths, broadly rounded behind, feebly emarginate at suture; surface smooth, brightly shining, punctures very small and in striae rows on posterior third of disc, about twice as large and moderately confused on basal half; disc descending slightly on posterior third before declivital descent. Declivity subvertical, irregularly subconcave; posterolateral margin acutely, moderately elevated from suture to lateral margin slightly below middle of declivity, much more strongly elevated from this point to basal margin at suture; interstriae 1 at basal margin with a minute tubercle, a second tubercle at middle of declivity slightly closer to lateral margin than to suture; surface brightly shining, punctures moderately coarse, rather close, deep; excavated area wider than long. Glabrous.

Protibiae as in *melanura*.

Type Locality.—Finca La Lola, Limón, Costa Rica.

Type Material.—The female holotype was taken at the type locality on VIII-

1963, No. 14, from *Theobroma cacao*, by J. L. Saunders.

The holotype is in my collection.

Amphicranus fulgidus, n. sp.

This species is distinguished from *melanura* (Blandford) by the smaller size and by characters on the frons and elytral declivity.

Female.—Length 2.8 mm (paratypes 2.8–3.0 mm), 2.7 times as long as wide; color dark brown, basal two-thirds of pronotum and elytra usually lighter.

Frons as in *melanura* except without any indication of a feeble carina or epistomal tubercle, but with a distinct, transverse impression above epistomal process and epistomal process broader. Antennal club 1.5 times as long as scape, 1.1 times as long as wide, apical margin straight; cirrus longer than club.

Pronotum 1.5 times as long as wide; as in *melanura*.

Elytra 1.5 times as long as wide, 1.15 times as long as pronotum; outline and disc as in *melanura* except posterior margin more broadly, more feebly emarginate. Declivity as in *melanura* except steeper, less strongly impressed, without a tubercle on lateral margin near middle of declivity.

Male.—Similar to female except antennal club oval, 1.3 times as long as wide, and declivity as in male *melanura*.

Type Locality.—Finca Los Diamantes near Dominical, Costa Rica.

Type Material.—The female holotype, male allotype, and 19 paratypes were taken at the type locality on 7-II-63, from *Theobroma cacao*, by J. L. Saunders.

The holotype, allotype, and paratypes are in my collection.

Amphicranus micans, n. sp.

This species is distinguished from *argutus* Wood by the smaller size, by the smaller, broader antennal club, by the shorter pronotum, and by the different elytral declivity.

Female.—Length 1.8 mm (paratypes 1.5–2.1 mm), 3.0 times as long as wide; color dark reddish brown, basal two-thirds of pronotum lighter.

Frons convex, epistomal process occupying median half, low, weakly developed; surface rugose-reticulate, punctures obscure; glabrous except at epistomal margin. Antennal club as long as scape, 1.1 times as long as wide, widest on apical third; tuft of hair on posterior face sparse, short.

Pronotum 1.4 times as long as wide; as in *melanura* (Blandford) except surface strongly reticulate, asperities more numerous, higher.

Elytra 1.8 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on basal three-fourths, very broadly rounded behind, feebly emarginate at suture; discal surface smooth, shining, except base of interstriae 1 reticulate in some specimens; striae punctures very small, in rows on posterior half, slightly confused on basal half. Declivity rather abrupt, very steep, somewhat biconcave; much as in *argutus* Wood except acute posterolateral margin not as strongly elevated, ending before middle of declivity, tubercle on interstriae 1 slightly larger, close to suture, tubercle 2 slightly below middle of declivity and much closer to suture (three-fourths of distance from lateral margin to suture), a feeble to moderate elevation (variable) extending from lateral margin to tubercle; punctures almost obsolete, surface smooth, brightly shining except for oval rugose area below tubercle 2 extending from its base to lateral margin. Glabrous except for sparse setae on sides near declivity.

Male.—Similar to female except declivity rather deeply, broadly concave, lateral margins higher, tubercles distinctly larger, tubercle 2 on small subtriangular elevation on mesal side of lateral margin, punctures on excavated area larger, deeper, rugose area absent.

Type Locality.—Río Damitas in the Dota Mountains, San José, Costa Rica.

Type Material.—The female holotype, male allotype, and six paratypes were taken at the type locality on 22-VIII-1963, No. 124, from the stump of a small tree, by me. Other paratypes include the following: 18 from Guapiles, Limón, Costa Rica, 22-VIII-66, leguminous tree (except one is from *Terminalia*); 6 are from Puerto Viejo, Heredia, Costa Rica, 12-III-1964, from an unidentified log; one

is from Peralta, Cartago, 10-III-1964, from an unidentified tree limb; one is from Ft. Clayton, Canal Zone, Panama, 22-XII-1963, from a leguminous tree; and one is from Limon Bay, Canal Zone, Panama, 30-XII-1963, from an unidentified log. All were taken by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus nemoralis, n. sp.

This species is distinguished from *regularis* Blackman by the larger size, by the slightly impressed declivital interstriae 2, and by the larger interstitial granules on the declivity. These two species are unique in having a row of normal setae on declivital interstriae 2.

Female.—Length 1.4 mm (paratypes 1.4-1.8 mm), 2.6 times as long as wide; color dark brown.

Frons uniformly convex; rugose-reticulate above eyes and laterally, lower areas smooth, shining, punctures deep, rather coarse, moderately close; vestiture sparse, short, inconspicuous.

Pronotum 1.04 times as long as wide; widest one-third pronotum length from base, sides weakly arcuate on basal half, a slight constriction on anterior half, rather narrowly rounded in front; anterior margin armed by about 10 low, basally contiguous serrations; summit indefinite, at middle; asperities in three concentric rows supplemented by those at summit, rows a bit irregular on median third; posterior areas reticulate, punctures deep, rather fine, moderately close. Sparse setae confined to margins.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, then slightly, arcuately converging, very broadly rounded behind; striae not impressed except one slightly near declivity, punctures small, deep, spaced by about two diameters of a puncture; interstriae smooth, shining, with a few faint irregular lines, three times as wide as striae, impunctate except at margin of declivity. Declivity steep, rather shallowly sulcate; striae 1 moderately impressed, punctures on 1 and 2 distinct, smaller than on disc; interstriae 1 moderately elevated, 2 moderately impressed, more strongly on median side, 3 very slightly higher than 1,

rounded, all with numerous impressed points, rows of tubercles on 1 very fine, 2 fine, sometimes irregular, 3 slightly larger than on 1 and 2. Vestiture confined to declivity; striae setae very minute but usually present; interstitial setae erect, in regular rows including 2, each very slightly longer than distance between rows.

Male.—Similar to female except serrations on anterior margin of pronotum and tubercles on declivity slightly larger.

Type Locality.—Zamorano, Morazan, Honduras.

Type Material.—The female holotype, male allotype, and 26 paratypes were taken at the type locality on 18-IV-1964, 700 m, No. 549, from *Aristolochia anguicida* stems. Thirteen paratypes are from 8 km SE Cartago, Cartago, Costa Rica, 29-VII-1963, 1,800 m, No. 91, from a liana; three paratypes bear the same data except they were taken on 2-VIII-1963, No. 100. All were taken by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus costatulus, n. sp.

This species is distinguished from *costabilis* Wood by the smaller average size, by the straight suture 1 of the antennal club, and by declivital interstriae 2 being impressed only on the mesal side in the female.

Female.—Length 1.1 mm (paratypes 0.9-1.2 mm), 2.6 times as long as wide; color very dark brown.

Frons flattened on a rather narrow area to well above upper level of eyes, slightly elevated toward epistomal margin, margins obtusely subangulate, laterally separated from margin of eye by distance equal to diameters of four facets; surface smooth, shining, punctures moderately coarse, deep, close, spaced by distances equal to less than half diameter of a puncture except more widely spaced on median third near epistoma; vestiture very fine, moderately abundant, uniformly distributed, slightly longer at margins, longest setae equal to about one-fourth distance between eyes. Antennal club small, oval; suture 1 straight, mostly septate, 2 moderately procurved, usually not septate.

Pronotum 1.1 times as long as wide; widest near base, sides on basal half almost straight, converging very slightly, rather narrowly rounded in front; anterior margin broadly armed by a subserrate continuous costa; summit at middle, distinct; anterior slope armed by three continuous, subserrate costae, a fourth at summit; posterior areas smooth, shining, with numerous impressed points, punctures moderately coarse, rather widely spaced. A row of setae behind each costa; posterior area glabrous.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures rather fine, close, deep; interstriae smooth, shining, with a few irregular, indefinite surface lines, twice as wide as striae, impunctate. Declivity steep, convex; striae 1 impressed, 2 not impressed, both with punctures smaller than on disc, impressed; interstriae 1 distinctly, abruptly elevated, armed by a row of fine granules, 2 weakly impressed, as wide as 1, with one or two punctures near apex and at base, 3 not elevated, rounded, armed by about six fine granules. Vestiture largely confined to declivity, consisting of sparse rows of short, stout setae on odd-numbered interstriae.

Male.— Similar to female except frons rather strongly convex, more coarsely punctured, transverse impression above epistoma deeper, vestiture much shorter, less abundant; declivital interstriae 1 without granules, punctures on declivital striae 1 and 2 smaller.

Type Locality.— Eighteen miles or 29 km W Niltpec, Oaxaca, Mexico.

Type Material.— The female holotype, male allotype, and 22 paratypes were taken at the type locality on 23-VI-1967, 30 m, No. 87, from *Thevetia* twig terminals, by me. Eight paratypes are from 10 miles or 16 km W Tizapan, Jalisco, Mexico, 18-VII-1953, from *Thevetia*, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus costabilis, n. sp.

This species is distinguished from *costatulus* Wood by the larger size, by the

much more strongly procurved sutures of the antennal club, by the more coarsely punctured declivital striae in the female, and by the more conspicuous epistomal bush of the male.

Female.— Length 1.6 mm (paratypes 1.6-1.8 mm), 2.6 times as long as wide; color very dark brown, almost black.

Frons largely concealed in specimens at hand, evidently similar to *costatulus* except more coarsely punctured, vestiture apparently less abundant, shorter. Antennal club with sutures 1 and 2 rather strongly procurved, 2 weakly, more distinctly septate near margins.

Pronotum about as in *costatulus* except crest of costae more strongly serrate.

Elytra as in *costatulus* except striae punctures slightly larger, deeper; declivital striae 1 and 2 more coarsely punctured, interstriae 1 unarmed, 2 more strongly impressed, 3 rounded, slightly elevated, without granules, vestiture similar but more closely spaced, an occasional seta on interstriae 4, 6, and 8.

Male.— Similar to female except frons as in *costatulus* with all features more strongly developed; striae punctures on disc about half as large as in female, those on declivity minute, interstriae 3 with minute granules.

Type Locality.— Ten miles or 16 km W Tizapan, Jalisco, Mexico.

Type Material.— The female holotype, male allotype, and six paratypes were taken on 18-VII-1953, from *Thevetia* branches, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus detentus, n. sp.

This species is distinguished by the broadly convex elytral declivity, with striae punctures 1 and 2 minute and interstriae 1 not elevated, and by the male and female frons as described below.

Female.— Length 1.7 mm (paratypes 1.4-1.8 mm), 2.6 times as long as wide; color brown.

Frons flat to well above eyes, ascending slightly toward epistomal margin on lower fourth, lateral margins subangulate, separated from eye by distance equal to diameter of three facets; surface smooth.

shining, punctures in central area very small, rather widely spaced, larger and more numerous at margins; vestiture sparse and rather short in central area, moderately abundant and very long at margin. Antennal club 1.5 times as long as wide, septum of suture 2 almost obsolete.

Pronotum 1.04 times as long as wide; outline about as in *costatulus* Wood except rows of asperities divided to their base, not costiform, impressed points largely obsolete, punctures rather small; anterior margin armed by about 18 serrations.

Elytra 1.7 times as long as wide, 1.6 times as long as pronotum; outline and disc as in *costatulus*; declivity steep, broadly convex, striae 1 feebly impressed, 1 and 2 minutely punctured, interstriae 1 weakly elevated unarmed, sparse punctures minute, 2 not impressed, almost twice as wide as 1, 3 not elevated, punctures small, widely spaced. Vestiture of minute striae setae and with interstitial setae as in *costabilis* Wood.

Male.— Similar to female except frons distinctly impressed, its margin forming a distinctly elevated crest outlining a semicircle from lateral margin of epistoma to slightly above eyes, punctures coarse, not close, vestiture short, sparse.

Type Locality.— Carapan, Michoacan, Mexico.

Type Material.— The female holotype, male allotype, and 26 paratypes were taken on 18-VI-1965, at 2,300 m elevation, from a woody vine (*Toxicodendron*?) by me. Three paratypes are from six miles or 10 km E Volcan Paracutin, Michoacan, Mexico, 19-VI-1965, 2,500 m, from a *Toxicodendron* vine, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus inops, n. sp.

In this species and in *debilis* Wood, sutures 1 and 2 on the antennal club are virtually obsolete. This species is distinguished from *debilis* by the smaller size, by the strongly reticulate pronotum, by the reticulate frons, and by other characters indicated below.

Female.— Length 1.1 mm (paratypes

1.1–1.2 mm), 2.7 times as long as wide; color yellowish brown.

Frons planoconvex from epistoma to slightly above upper level of eyes, lateral margins subangulate, separated from margin of eye by distance equal to diameter of one facet; surface apparently reticulate, oral area pale and covered by short, rather abundant hair, upper area with fine, uniformly distributed punctures, upper margin above level of eyes bearing a fringe of very long, yellow hair, tips exceeding epistomal margin. Antennal club subcircular, sutures 1 and 2 moderately procurved, marked only by very obscure lines, not marked by setae.

Pronotum 1.1 times as long as wide; outline as in *costatulus* Wood; anterior margin subcostate, with about 14 serrations obscurely indicated; summit at middle; anterior slope with two concentric rows of asperities, those near summit largely confused; posterior areas reticulate, punctures fine, not close. Vestiture confined to lateral margins and asperate area.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures very fine, shallow, spaced within a row by two to four diameters of a puncture; interstriae smooth, shining, with numerous impressed points, about three times as wide as striae. Declivity steep, broadly convex; striae 1 and 2 punctured as on disc; interstriae 1 weakly elevated, a few minute granules obscurely indicated, 2 as wide as 1, very feebly impressed, 3 not elevated, armed by a row of very fine granules. Strial setae very short, very fine, confined to posterior half; odd-numbered interstriae with rather sparse, narrowly spatulate setae on and near declivity.

Male.— Similar to female except frons more strongly convex, a slight transverse impression above epistoma, fully reticulate, punctures slightly larger.

Type Locality.— Rincon de Osa, Puntarenas, Costa Rica.

Type Material.— The female holotype, male allotype, and five paratypes were taken at the type locality on 11-VII-1966, 30 m, No. 85, from an unidentified tree limb, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus debilis, n. sp.

This species is distinguished from *inops* Wood by the slightly larger size, by the shining lower frons and pronotum, by the longer setae on the female frons, and by the presence of setae on all interstriae.

Female.—Length 1.3 mm (paratypes 1.2–1.4 mm), 2.7 times as long as wide; color yellowish brown.

Frons about as in *inops* except marginal fringe of hair extending from dorsal margin to lower lateral margins, short setae in lower central area apparently absent; surface shining from epistoma to upper level of eyes.

Pronotum as in *inops* except serrations on anterior margin more deeply divided, disc usually shining, obscurely reticulate in some specimens.

Elytra as in *inops* except striae punctures slightly larger, declivital interstriae 2 weakly, more distinctly impressed; all interstriae on declivity with erect, blunt setae, except absent on 2 below basal margin.

Male.—Similar to female except frons convex, with punctures coarse and vestiture very short, sparse, inconspicuous.

Type Locality.—San Ignacio de Acosta, San José, Costa Rica.

Type Material.—The female holotype, male allotype, and 38 paratypes were taken at the type locality on 5-VII-1963, 1,500 m, No. 28 from an unidentified branch and No. 32 (type) from *Mauria glauca*, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus tenax, n. sp.

This species is distinguished from *juglandis* Blackman by the absence of long hair on the female frons, by the more abundant, longer interstitial setae on all declivital interstriae except 2, by the steeper, more shining declivity, and by other characters.

Female.—Length 1.6 mm (paratypes 1.6–1.7 mm), 2.8 times as long as wide; color yellowish brown.

Frons broadly convex, epistomal margin distinctly elevated; surface smooth and shining below upper level of eyes, reticulate above, punctures rather coarse; vestiture short, sparse, inconspicuous. (Upper areas on holotype concealed by pronotum, not fully visible.)

Pronotum 1.17 times as long as wide; pronotum as in *juglandis* except anterior margin armed by about 10 serrations and punctures on posterior areas slightly larger.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; outline as in *juglandis* except sides on posterior third converging more conspicuously, declivital area narrower; striae as in *juglandis* except punctures slightly larger, interstriae as wide as striae. Declivity much as in *juglandis* except striae 1 more strongly impressed, interstriae 2 ascending laterally more strongly, 1 and 3 without granules; surface smooth, shining, not shagreened. Interstitial setae largely confined to declivity, on all interstriae except 2, slightly longer and much more closely spaced than in *juglandis*.

Male.—Similar to female except frons very slightly more strongly convex.

Type Locality.—Volcan Pacaya, Esquintla, Guatemala.

Type Material.—The female holotype, male allotype, and one paratype of undetermined sex were taken at the type locality on 1-VI-1974, 1,300 m, No. 692, from a broken branch 2 cm in diameter from a large tree, by me.

The holotype, allotype, and paratype are in my collection.

Pityophthorus strictus Wood

This species is distinguished from *tenax* Wood by the presence of a few long setae on the female frons, by the much more finely punctured frons, pronotum, and elytra, and by the different declivity as described below.

Female.—Length 1.3 mm, 2.8 times as long as wide; color yellowish brown.

Frons as in *tenax*, with punctures much finer, about a dozen long setae in lateral areas on lower half, a somewhat indistinct median callus above upper level of eyes.

Pronotum 1.08 times as long as wide; about as in *tenax* except anterior margin costate, its crest weakly serrate, and posterior areas rather finely punctured.

Elytra 1.7 times as long as wide, 1.7 times as long as pronotum; as in *tenax* except stria punctures smaller, interstriae one and one-half times as wide as striae, declivity more strongly convex, striae 1 less strongly impressed, interstriae 1 and 3 with very fine granules.

Male.— Similar to female except frons very slightly more strongly convex and without any long setae.

Type Locality.— Santa Ana, San José, Costa Rica.

Type Material.— The female holotype, male allotype, and four paratypes were taken at the type locality on 30-VIII-1963, 1,300 m, No. 157, from *Rhედedia edulis* branches, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus galeritus, n. sp.

This species is distinguished from *nanus* Wood by the more extensively distributed female frontal vestiture, by the less strongly impressed male frons, by the more shallowly sulcate male declivity, and by other characters.

Female.— Length 1.2 mm (paratypes 1.1-1.2 mm), 2.8 times as long as wide; color yellowish brown.

Frons planoconvex on a rather limited area from epistoma to well above eyes, lateral margins rounded, separated from margin of eye by distance equal to width of four facets; surface smooth, shining, rather coarsely, closely punctured; vestiture fine, moderately abundant, uniformly distributed, of uniform length, rather short.

Pronotum as in *nanus* except posterior areas with numerous strongly impressed points, punctures deeper, evidently very slightly larger.

Elytra as in *nanus* except stria punctures on disc closer, deeper, declivity slightly narrower, appearing deeper, interstriae 3 higher than 1, 1 and 3 armed by very fine tubercles, vestiture confined to declivital area, on all interstriae except 2, setae much stouter, more closely spaced.

Male.— Similar to female except frons subconcavely impressed on median half of area between epistoma and upper level of eyes, upper margin transversely subcarinate, surface smooth shining, coarsely punctured, vestiture fine, short, inconspicuous; declivital setae slightly stouter.

Type Locality.— Río Damitas in the Dota Mountains, San José, Costa Rica.

Type Material.— The female holotype, male allotype, and three paratypes were taken at the type locality on 18-II-1964, 250 m, No. 434, from a *Rhედedia edulis* log 25 cm in diameter.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus perexiguus, n. sp.

This species is distinguished from *atomus* Wood by the absence of a frontal carina in the male, by the steeper, more broadly impressed elytral declivity, and by other characters described below.

Female.— Length 1.1 mm (paratypes 1.0-1.4 mm), 2.8 times as long as wide; color yellowish brown.

Frons weakly, transversely impressed from epistoma to upper level of eyes, all margins rounded; surface smooth, shining, sparsely, finely punctured; margins at sides and above with sparse, moderately long hair.

Pronotum as in *atomus* except pronotal punctures smaller.

Elytra as in *atomus* except declivity steeper, more broadly impressed, striae 2 more coarsely punctured, interstriae 2 more broadly, more deeply impressed, 3 with granules slightly larger, declivital setae much stouter.

Male.— Similar to female except frons more strongly convex, transverse impression restricted to lower third, surface more coarsely, more closely punctured, without any long hair.

Type Locality.— Dominical Puntarenas, Costa Rica.

Type Material.— The female holotype, male allotype, and 19 paratypes were taken at the type locality on 9-XII-1963, 3m, No. 297, from a tree branch by me. Other paratypes were taken as follows: 22 from Cañas, Guanacaste, Costa Rica,

13-VII-1966, tree branch, by me; 8 from Limon Bay, Canal Zone, Panama, 30-XII-1963, 3 m, No. 353, tree limb, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus nugalis, n. sp.

This species is distinguished by the unique female frons, by the subacuminate apex of the elytra, and by other characters described below.

Female.—Length 1.3 mm (paratypes 1.2-1.3 mm), 3.1 times as long as wide; color brown.

Frons moderately convex, epistomal area produced on median half into a pre-mandibular lobe; surface subreticulate. punctures fine below, moderately coarse near upper level of eyes; vestiture of fine, long, yellow hair confined to area below upper level of eyes, distributed into three areas, lateral areas from base of mandible to upper level of eye, median fourth from apex of premandibular process to upper level of eyes. Antennal club small, oval; sutures 1 and 2 straight, indicated at margins by septa and setae; most of anterior face glabrous.

Pronotum 1.2 times as long as wide; sides on basal half straight and parallel, broadly rounded in front; anterior margin armed by about 14 coarse serrations; summit at middle; anterior slope armed by two concentric rows of asperities, others near summit confused; posterior areas smooth, shining, small areas of reticulation in lateral areas sometimes present, with numerous fine, impressed points, punctures rather small, moderately abundant. Vestiture inconspicuous, confined to asperate area and lateral margins.

Elytra 2.0 times as long as wide, 1.8 times as long as pronotum; sides almost straight and parallel on basal three-fourths, broadly rounded behind except sutural apex moderately acuminate; striae not impressed, punctures in rows rather small, shallow; interstriae twice as wide as striae, smooth, shining, with numerous impressed points, an occasional puncture near declivity. Declivity rather steep, moderately bisulcate; striae 1 impressed, punctures not clearly evident, 2 with fine, distinct punctures; interstriae 1 moderately, abruptly elevated, armed by two to four very fine granules, 2 moderately

impressed, more strongly on median side, as wide as 1, with numerous impressed points, 3 as high as 1, broadly rounded, armed by about two fine granules. Vestiture of minute striae hair on posterior half, and sparse, moderately long interstitial setae on odd-numbered interstriae, mostly on declivity.

Male.—Similar to female except frons convex, rather coarsely punctured, a fine, low, median carina, epistoma normal, vestiture sparse, inconspicuous; tubercles on elytral declivity distinctly larger.

Type Locality.—Volcan Pacaya, Esquintla, Guatemala.

Type Material.—The female holotype, male allotype, and four paratypes were taken at the type locality on 1-VI-64, 1,300 m, No. 656, from a woody vine 1 cm in diameter, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus hermosus, n. sp.

This species is distinguished from *minutalis* Wood by the long, abundant vestiture on the female frons, by the reticulate pronotum, and by other characters described below.

Female.—Length 1.2 mm (paratypes 1.0-1.3 mm), 2.7 times as long as wide; color brown.

Frons flat from epistoma to vertex, lateral margins obtusely subangulate, separated from margin of eye by distance equal to width of two facets; surface obscured by dense brush of uniformly distributed long hair, marginal setae apparently slightly longer, longest setae equal to at least two-thirds distance between eyes.

Pronotum 1.13 times as long as wide; outline essentially as in *nugalis* Wood; first two rows of asperities usually concentric, sometimes partly confused in median area; posterior areas strongly reticulate, punctures fine, moderately abundant. Vestiture confined to margins and asperate area, inconspicuous.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; outline basically as in *nugalis*; striae not impressed, punctures moderately coarse, rather deep; interstriae smooth, shining, a few minute,

impressed points present, as wide as striae, impunctate except at margin of declivity. Declivity steep, rather strongly bisulcate; as in *nugalis* except sulcus slightly deeper, lateral margins on basal half slightly higher than suture, tubercles on interstriae 3 conspicuously larger. Vestiture confined to declivity, on all interstriae except restricted to basal margin on 2, of moderate length.

Male.— Similar to female except frons transversely impressed from epistoma to upper level of eyes, transversely carinate at upper margin of impressed area, surface rather closely, finely punctured, pubescence of fine, short, moderately abundant hair.

Type Locality.— Yuscaran, Paraiso, Honduras.

Type Material.— The female holotype, male allotype, and 29 paratypes were taken at the type locality on 23-IV-64, 800 m, No. 517, *Perymanium grande*, by me. Eight paratypes are from Zamorano, Morazan, Honduras, 18-IV-64, 700 m, No. 565, *Eupatorium daliioides*, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus minutalis, n. sp.

This species is distinguished by the small size and slender form, by the acuminate apex of the elytra, and by the distinctive frons as described below.

Female.— Length 1.0 mm (paratypes 0.9-1.0 mm), 3.2 times as long as wide; color brown.

Frons planoconvex from epistoma to well above upper level of eyes, lateral margins obtusely subangulate, separated from margin of eye by distance equal to width of two facets; surface smooth, shining, finely, closely punctured; vestiture uniformly distributed, of almost uniform length, longest setae equal in length to one-fourth distance between eyes.

Pronotum 1.2 times as long as wide; outline basically as in *nugalis* Wood, anterior slope with three concentric rows of asperities; posterior areas shining, almost smooth, punctures small, moderately close. Vestiture confined to lateral margins and asperate area, inconspicuous.

Elytra 2.0 times as long as wide, 1.8

times as long as pronotum; outline as in *nugalis*; striae not impressed, punctures small, deep, spaced within a row by twice diameter of a puncture; interstriae smooth, shining, impressed points sparse, a few weak, short, transverse lines, about one and one-half times as wide as striae, impunctate. Declivity steep, moderately bisulcate; as in *nugalis* except interstriae 2 without impressed points. Vestiture as in *nugalis*.

Male.— Similar to female except frons shallowly, transversely impressed to upper level of eyes, upper margin of impressed area forming a weak, transverse carina, surface of impressed area with indistinct, fine punctures, vestiture fine, sparse, short, inconspicuous.

Type Locality.— Palin, Esquintla, Guatemala.

Type Material.— The female holotype, male allotype, and 10 paratypes were taken at the type locality on 19-V-1964, 300 m, No. 587, from a shrub, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus sobrinus, n. sp.

This species is distinguished from *minutalis* Wood by characters on the frons and declivity as described below.

Female.— Length 1.5 mm (paratypes 1.5-1.7 mm), 3.0 times as long as wide; color dark brown.

Frons flattened on slightly more than upper half, ascending below toward epistomal margin, lateral margins obtusely angulate, separated from margin of eye by width of two facets; surface smooth, shining, finely, rather closely punctured except impunctate on a small median area on lower third; vestiture of fine hair of moderate length in central area, much longer on margins, longest setae equal in length to slightly more than half distance between eyes.

Pronotum 1.18 times as long as wide; outline as in *nugalis*; anterior slope with three concentric rows of asperities (sometimes slightly confused), others confused near summit; posterior areas smooth, shining, with numerous impressed points, punctures fine, rather close. Vestiture confined to lateral margins and asperate area, inconspicuous.

Elytra 2.0 times as long as wide, 1.7 times as long as pronotum; outline about as in *minutalis*; striae not impressed, punctures coarse, deep, close; interstriae as wide as striae, smooth, shining, with minute impressed points, impunctate except 1 with a few punctures on posterior third. Declivity steep, shallowly bisulcate; not as steep as in *minutalis*, more broadly impressed; interstriae 2 with minute impressed points. Vestiture confined to declivity on odd-numbered interstriae, fine, rather sparse, of moderate length.

Male.— Similar to female except frons rather shallowly, transversely impressed from epistoma to upper level of eyes, its upper margin on median third marked by a subcarinate, transverse, impunctate elevation, surface smooth, shining, coarsely, rather closely punctured; declivital sulcus conspicuously deeper, tubercles slightly larger.

Type Locality.— Three km SE Cartago, Cartago, Costa Rica.

Type Material.— The female holotype, male allotype, and 30 paratypes were taken at the type locality on 2-VIII-1963, 1,300 m, No. 99, from a woody vine, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus laetus, n. sp.

This species is distinguished by the small, elongate, aseptate antennal club, by the pronotum which has asperities extending to near the basal margin, and by the simple elytra.

Female.— Length 1.7 mm (paratypes 1.6-1.7 mm), 2.6 times as long as wide; color black.

Frons flat from eye to eye, from epistoma to above eyes (concealed by pronotum above eyes), epistomal margin narrowly, weakly elevated; surface smooth, shining, punctures very fine, shallow, very sparse on central two-thirds, more numerous towards margins, margins rounded; vestiture of fine long hair on margins, a few sparse, shorter hairs in central area, longest setae equal in length to about half distance between eyes. Antennal club slightly longer than scape, 1.6 times as long as wide, smooth, shining, glabrous on anterior face, not septate, su-

ture 1 obsolete, 2 very feebly indicated on surface by a procurved line on apical half, sutural constrictions and setae confined to margins.

Pronotum 1.05 times as long as wide; widest on basal third, sides moderately arcuate on basal third, almost straight and converging on middle third, rather narrowly rounded in front, anterior margin armed by 10-14 rather coarse serrations; summit indefinite, at or slightly behind middle; asperities small, numerous, continuing in declining, subparallel, somewhat indistinct rows almost to base; posterior areas shining, with numerous impressed points, punctures small, spaced by two to four or more diameters, those in lateral areas mostly associated with subasperate lines. Vestiture of short, sparse hair, glabrous on disc.

Elytra 1.7 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae not impressed, punctures very fine, shallow, spaced by two to four diameters of a puncture, in rows; interstriae three to four times as wide as striae, surface smooth, brightly shining, with many obscurely impressed points and irregular lines, a few fine punctures on odd-numbered interstriae on posterior half. Declivity steep, convex; striae not impressed, punctures slightly smaller than on disc; interstriae 1 very feebly elevated, higher than 3, 2 as wide as 1 or 3, very feebly impressed, impunctate, 1 and 3 with a row of minute granules. Minute striae setae on declivity, odd-numbered interstriae on disc with rather widely spaced, erect, moderately long, stout hair, declivity with all interstriae except 2 with similar setae.

Type Locality.— Volcan Poas, Heredia, Costa Rica.

Type Material.— The female holotype and two female paratypes were taken at the type locality on 19-XI-1963, 2,500 m, No. 261, from a tree branch 8 cm in diameter, by me.

The holotype and paratypes are in my collection.

Pityophthorus lenis, n. sp.

This species is distinguished by the large, elongate, obovate antennal club

with aseptate, rather obscure sutures, by the strongly reticulate pronotal disc, and by the simple elytral sculpture.

Female.—Length 1.2 mm (paratypes 1.2-1.4 mm), 2.8 times as long as wide; color brown.

Frons transversely, broadly concave, transversely impressed from epistoma to upper level of eyes (longitudinally concave); surface reticulate, median third impunctate from epistoma to vertex, lateral areas rather coarsely, closely punctured; punctured areas ornamented by long, moderately abundant hair, longest setae equal in length to about two-thirds distance between eyes. Antennal club 1.7 times as long as scape; club 1.3 times as long as wide, obovate, widest on apical third, anterior face shining, glabrous except for short setae along sutures, sutures aseptate, marked by a fine line and a row of short setae.

Pronotum 1.05 times as long as wide; sides on basal half subparallel, feebly arcuate, rather narrowly rounded in front; anterior margin subcostate, armed by 10-12 low, basally fused serrations; pronotum reticulate, punctures in posterior areas rather small, moderately close. Glabrous except in marginal areas.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel, rather broadly, irregularly rounded behind; striae 1 weakly impressed near declivity, others not impressed, punctures fine, becoming minute near declivity, in rows; interstriae almost smooth, shining, impressed points appearing as minute, confused punctures, punctures absent. Declivity steep, shallowly bisulcate; striae obsolete; interstriae 1 moderately, abruptly elevated, 2 almost twice as wide as 1, rather strongly, broadly impressed, smooth, shining, obscure points indicated, 3 as high as 1, rounded, armed by about four very fine tubercles. Vestiture confined to odd-numbered interstriae, of widely spaced, erect, rather short, slender bristles.

Male.—Similar to female except frons broadly, evenly convex, coarsely, rather closely punctured, a weak median tubercle on epistoma, vestiture short, sparse, inconspicuous.

Type Locality.—Tapanti, Cartago, Costa Rica.

Type Material.—The female holotype, male allotype, and 11 paratypes were taken at the type locality on 24-X-1963, 1,300 m, No. 244, from a woody vine, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus parilis, n. sp.

This species is distinguished from *guatemalensis* Blandford by the more sculptured female frons, by the more coarsely punctured elytral striae, by the more shallowly sulcate elytral declivity, and by other characters.

Female.—Length 1.6 mm (paratypes 1.6-1.7 mm), 2.8 times as long as wide; color very dark brown.

Frons flat from epistoma to vertex, from eye to eye, subangulate margin separated from margin of eye by distance equal to diameter of three facets; surface smooth, shining, rather coarsely, closely, uniformly, deeply punctured; vestiture rather abundant, uniformly distributed, distinctly longer at margins, longest setae about equal to one-third distance between eyes.

Pronotum 1.1 times as long as wide; outline as in *guatemalensis*; posterior areas weakly reticulate, punctures rather fine, moderately close. Glabrous except at margins.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; outline and disc as in *guatemalensis* except interstriae only slightly wider than striae. Declivity as in *guatemalensis* except steeper and much less strongly bisulcate. Vestiture confined to declivity, stouter than in *guatemalensis*.

Type Locality.—Buenos Aires, Cortez, Honduras.

Type Material.—The female holotype and two female paratypes were taken at the type locality on 7-V-1964, 2,300 m, No. 578, from a *Quercus* branch 4 cm in diameter, by me.

The holotype and paratypes are in my collection.

Pityophthorus scitulus, n. sp.

This species is distinguished from *guatemalensis* Blandford by the coarser striae punctures, by the steeper, more

strongly sulcate declivity, and by the much more coarsely punctured declivital striae 1 and 2.

Female.—Length 1.9 mm (paratypes 1.8-2.1 mm), 3.2 times as long as wide; color brown.

Frons essentially as in *guatemalensis* except more finely punctured, central area on lower half more extensively impunctate, lateral margins of flattened area separated from eye by distance equal to width of one facet, vestiture much more abundant on margins, shorter in central area, longest setae equal to more than half distance between eyes.

Pronotum 1.25 times as long as wide; outline basically similar to *guatemalensis*; posterior areas with surface smooth, shining, small and minute punctures intermixed. Glabrous except at margins.

Elytra 1.9 times as long as wide, 1.6 times as long as pronotum; sides straight and parallel on basal three-fourths, rather abruptly rounded then subacuminate behind; striae not impressed except 1 near declivity; interstriae smooth, shining, punctures coarse, very close; interstriae smooth, shining, with obscure, fine transverse lines, impressed points appearing as fine, confused punctures, punctures absent. Declivity steep, rather strongly bisulcate, apex subacuminate; striae 1 and 2 very coarsely punctured, punctures appear confused on some specimens; interstriae slightly elevated, finely punctured, 2 strongly sulcate, narrowly above, broadly below, shining, space almost entirely occupied by striae punctures, 3 slightly higher than 1 and armed by two pairs of pointed denticles on upper half, an additional granule present on lower third, lateral areas rather coarsely punctured. Vestiture of moderately long interstitial hair on base and lateral areas of declivity.

Male.—Similar to female except frons broadly convex, coarsely, closely punctured, vestiture short, sparse, inconspicuous; declivity more strongly impressed, lateral denticles distinctly larger.

Type Locality.—Volcan de Chiriqui, Chiriqui, Panama.

Type Material.—The female holotype, male allotype, and 18 paratypes were taken at the type locality on 11-I-1964,

1600 m. from a *Quercus* limb, by me. Five paratypes are from Tapanti, Cartago, Costa Rica. 2-VII-1963. 1,300 m. No. 6, *Quercus* limb, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus conspectus, n. sp.

This species is distinguished from *guatemalensis* Blandford by the less extensively flattened female frons with the vestiture much shorter and less abundant, by the coarser pronotal punctures and by the very different declivity described below.

Female.—Length 1.6 mm (paratypes 1.6-1.8 mm), 2.8 times as long as wide; color very dark brown.

Frons as in *guatemalensis* except less extensively flattened, margin of flattened area separated from margin of eye by distance equal to width of five facets, not extending as high on vertex; vestiture moderately abundant on smaller area, longest setae equal to about one-third distance between eyes. Antennal club larger and more nearly circular than in *guatemalensis*, sutures 1 and 2 rather strongly procurved (almost straight in *guatemalensis*).

Pronotum 1.1 times as long as wide; as in *guatemalensis* except punctures on posterior areas much coarser.

Elytra 1.7 times as long as wide, 1.7 times as long as pronotum; outline and disc as in *guatemalensis*. Declivity steep, convex; striae 1 and 2 not impressed, punctures very fine; interstriae 1 feebly elevated, armed by two or three very fine granules, 2 flat, as wide as 1, not impressed, impunctate, 3 not elevated, armed by a row of about five small granules. Vestiture consisting of erect, short, interstitial setae on posterior third of disc and declivity except absent on declivital interstriae 2.

Male.—Similar to female except frons weakly convex, a median callus on upper half, coarsely punctured, vestiture short, sparse, inconspicuous.

Type Locality.—Volcan Irazu, Cartago, Costa Rica.

Type Material.—The female holotype, male allotype, and one female paratype were taken at the type locality on 26-IX-

1963. 2,300 m. No. 208. from a branch (possibly *Quercus*), by me.

The holotype, allotype, and paratype are in my collection.

Pityophthorus medialis. n. sp.

This species is distinguished from *guatemalensis* Blandford by the moderately procurved sutures of the antennal club, by the more posterior summit of the pronotum, by the punctured discal interstriae, by the steeper, less strongly sulcate elytral declivity, and by other characters described below.

Female.—Length 2.0 mm (paratypes 1.9–2.4 mm), 2.6 times as long as wide; color dark brown.

Frons similar to *guatemalensis* except more extensively flattened, pubescent area separated from margin of eye by distance equal to diameter of three facets, vestiture more abundant, slightly shorter. Antennal club with sutures 1 and 2 moderately procurved.

Pronotum 1.1 times as long as wide; similar to *guatemalensis* except summit distinctly behind middle, low crenulations extending to base on sides and lateral areas of disc, punctured area on disc about half as large as in *guatemalensis* (about one-third width of pronotum).

Elytra 1.7 times as long as wide, 1.6 times as long as pronotum; outline and disc as in *guatemalensis* except interstriae each with a sparse row of punctures, punctures about equal in size to those of striae. Declivity steep, convex; similar to *guatemalensis* but steeper, sulcus perhaps half as deep, tubercles on interstriae 1 and 3 slightly larger. Vestiture of minute striaal hair and moderately long, erect, fine, interstitial setae on disc and declivity, except largely absent on declivital interstriae 2.

Male.—Similar to female except frons convex, a slight transverse impression above epistoma, surface shining, closely, deeply, rather coarsely punctured, vestiture short, sparse, inconspicuous; declivital sulcus deeper, broader, similar to female *guatemalensis*.

Type Locality.—Volcan Irazu, Cartago, Costa Rica.

Type Material.—The female holotype, male allotype, and 52 paratypes were

taken at the type locality on 26-IX-1963, 2,300 m. No. 208, from *Quercus* branches less than 10 cm in diameter, by me. Fifteen paratypes are from Cerro de la Muerte, San José, Costa Rica, 1-VIII-1966, 3,200 m. No. 45, *Quercus*, by me; two paratypes are from Volcan Poas, Heredia, Costa Rica, 14-VII-63, 2,500 m. No. 48A, from a cut seedling, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus indigens, n. sp.

This species is distinguished from *nanus* Wood by the much more feebly sulcate elytral declivity, by the very different frons in both sexes, and by other characters described below.

Female.—Length 1.2 mm (paratypes 1.2–1.4 mm), 2.7 times as long as wide; color yellowish brown.

Frons flattened to well above eyes, ascending slightly at epistomal margin; lateral margins abruptly angulate, separated from margin of eye by distance equal to width of two facets; surface smooth, shining, punctures fine, not close, uniformly distributed; vestiture of fine hair, those in central area of moderate length, those on margin twice as long, tips of longest setae on upper margin reach epistomal margin.

Pronotum 1.06 times as long as wide; essentially as in *nanus* Wood except anterior margin more narrowly rounded, serrations more restricted to median area, punctures on posterior areas less numerous, slightly smaller.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; essentially as in *nanus* except declivity more strongly convex, striae 1 narrowly, rather deeply impressed, punctures on 1 and 2 smaller, interstriae 2 narrower, ascending more abruptly laterally, 1 and 3 without granules.

Male.—Similar to female except shallowly, transversely impressed to upper level of eyes, its upper margin broadly, obtusely subcarinate, surface rather coarsely, sparsely punctured, impressed area ornamented by sparse, very long hair.

Type Locality.—Two miles or 3 km W Armeria, Colima, Mexico.

Type Material.— The female holotype, male allotype and six paratypes were taken at the type locality on 28-VI-1965, 70 m, No. 129, from *Bursera* branches. Other paratypes were taken in Mexico from *Bursera* branches as follows: three from 18 miles or 29 km W Niltipec, Oaxaca, 23-VI-1967, 30 m, No. 88, and one from 13 miles or 21 km N Juchitlan, Jalisco, 2-VII-1965, 1,000 m, No. 180. All were taken by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus burserae, n. sp.

This species is distinguished from *indigens* Wood by the larger size, by the longer, more abundant vestiture on the female frons, and by other characters mentioned below.

Female.— Length 1.5 mm (paratypes 1.5-1.6 mm), 2.7 times as long as wide; color yellowish brown.

Frons as in *indigens* except central area almost impunctate and glabrous, extending higher on vertex, marginal setae longer.

Pronotum and elytra essentially as in *indigens* except elytral declivity narrowly, more deeply sulcate, lateral convexities slightly higher than suture, interstrial setae on all declivital interstriae except upper two-thirds of 2.

Male.— Similar to female except frons as in male *indigens*.

Type Locality.— Atenquique, Jalisco, Mexico.

Type Material.— The female holotype and two female paratypes were taken at the type locality on 24-VI-1965, 1,000 m, No. 114, from *Bursera* branches, by me. The male allotype and two female paratypes are from 13 miles or 21 km N Juchitlan, Jalisco, Mexico, 2-VII-1965, 1000 m, No. 180, *Bursera*, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus morosus, n. sp.

This species is distinguished from *paulus* Wood by the distinctly, moderately arcuate sutures 1 and 2 of the antennal club, by the absence of a median callus

on the vertex, and by other characters mentioned below.

Female.— Length 1.4 mm (paratypes 1.3-1.6 mm), 2.7 times as long as wide; color very dark brown.

Frons broadly convex, a feeble transverse impression in some specimens; surface smooth and shining on lower half, reticulate above, reticulation on vertex often transversely etched, punctures rather fine, never confluent, median callus feebly developed or absent; vestiture fine, sparse, short, inconspicuous. Antennal club conspicuously longer than scape; sutures 1 and 2 slightly arcuate.

Pronotum as in *paulus* except discal punctures much smaller, impressed points minute, less abundant; asperities varying from subconcentric to confused.

Elytra as in *paulus* except surface smoother, punctures much smaller, interstriae twice as wide as striae, impressed points on declivity less abundant and minute to absent, vestiture usually shorter, stouter.

Male.— Similar to female in all respects.

Type Locality.— Zamorano, Morazan, Honduras.

Type Material.— The female holotype, male allotype, and 19 paratypes were taken at the type locality on 18-IV-1964, 700 m, No. 554, from *Eupatorium dalioides*, by me. Nine paratypes are from Volcan de Agua, Guatemala, 19-V-1964, 1,000 m, No. 601, from a woody vine. A long series from 9 miles or 14 km E Huatusco, Veracruz, Mexico, was not included in the type series.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus molestus, n. sp.

This species is distinguished from *lautus* Eichhoff by the presence of a median frontal carina, by the more shallowly sulcate declivity, and by the longer elytral setae.

Female.— Length 1.4 mm (paratypes 1.3-1.5 mm), 2.8 times as long as wide; color yellowish brown.

Frons weakly convex, with a weak median carina from epistoma almost to upper level of eyes; surface shining, with

indistinct fine lines and punctures, more coarsely punctured above eyes; vestiture of fine, short, sparse hair.

Pronotum and elytral disc as in *lautus*. Elytral declivity as in *lautus* except interstriae 2 very slightly less strongly impressed, vestiture much longer.

Male.— Similar to female in all respects.

Type Locality.— Los Abritos, San Luis Potosi, Mexico.

Type Material.— The female holotype, male allotype, and 12 paratypes were taken at the type locality (on Highway 80 east of Ciudad del Maiz) on 18-VI-1953, from *Liquidambar styraciflua*, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus diligens, n. sp.

This species is distinguished from *sambuci* Blackman by the more broadly impressed elytral declivity, with the lateral convexities more abruptly rounded; by the more strongly, more extensively impressed frons; and by other characters.

Female.— Length 1.3 mm (paratypes 1.3-1.5 mm), 2.8 times as long as wide; color almost black.

Frons broadly convex, almost flat on median lower half, often with upper margin of impressed area abrupt or obscurely subcarinate; surface smooth, shining, rather finely punctured; vestiture short, sparse, inconspicuous.

Pronotum 1.15 times as long as wide; outline as in *sambuci*; anterior margin costate; posterior areas almost smooth, shining, very obscurely subreticulate, punctures rather fine, deep, not close. Vestiture as in *sambuci*, disc glabrous.

Elytra 1.8 times as long as wide, 1.6 times as long as pronotum; outline and disc about as in *sambuci* except stria punctures deeper, surface smoother, without any reticulation. Declivity steep, shallowly bisulcate; as in *sambuci* except punctures on striae 1 and 2 as large as on disc, appearing slightly more broadly impressed with lateral convexities more abruptly rounded, more deeply impressed in some specimens; vestiture finer.

Male.— Similar to female except frons

and declivital sulcus more distinctly impressed.

Type Locality.— Ten miles or 16 km E Pachuca, Hidalgo, Mexico.

Type Material.— The female holotype, male allotype, and 11 paratypes were taken at the type locality on 10-VI-67, 2,600 m, No. 186, from a desert shrub with bluish leaves, by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus corruptus, n. sp.

This species is distinguished from *lautus* Eichhoff by the larger size, by the different frons in both sexes, and by other minor differences described below.

Female.— Length 1.6 mm (paratypes 1.4-1.8 mm), 2.6 times as long as wide; color reddish brown.

Frons planoconvex to upper level of eyes, more strongly convex above; surface almost smooth and shining on lower half, punctures moderately coarse, not close, becoming closely granulate-punctate above eyes; vestiture of rather sparse, almost uniformly distributed, moderately long hair.

Pronotum and elytra as in *lautus* except elytral declivity steeper, interstriae 2 more strongly impressed, interstriae 3 conspicuously higher than 1.

Male.— Similar to female except lower half of frons moderately, transversely impressed, surface more coarsely punctured, vestiture short, inconspicuous.

Type Locality.— Matamoros, Puebla, Mexico.

Type Material.— The female holotype, male allotype, and 25 paratypes were taken at the type locality on 14-VI-67, 2,000 m, No. 34, from the stem of a climbing poison ivy (*Toxicodendron* sp.), by me.

The holotype, allotype, and paratypes are in my collection.

Pityophthorus nebulosus, n. sp.

This species is distinguished from *nanus* Wood by the very different female frons, by the smaller elytral punctures, and by the much more shallowly sulcate declivity.

Female.— Length 1.6 mm (paratypes 1.4-1.7 mm), 3.0 times as long as wide; color yellowish brown.

Frons transversely impressed from epistoma to upper level of eyes, upper margin subangulate; surface shining, rather coarsely, closely punctured except sparsely on small central area; vestiture of moderately abundant rather long hair about uniformly distributed over impressed area.

Pronotum as in *nanus* except asperities in less definite rows, punctures on disc slightly smaller, disc more shagreened.

Elytra as in *nanus* except discal punctures smaller, declivital sulcus very shallow, interstriae 2 flat, 1 as high as 3, shagreened. Vestiture confined to odd-numbered declivital interstriae, sparse, each seta flattened on its apical third, appearing narrowly spatulate.

Male.— Similar to female except slightly smaller; frontal impression restricted to lower half, deeper; punctures less abundant, more uniformly distributed; vestiture short, sparse, inconspicuous; declivital impression wider, distinctly deeper (but much less strongly impressed than in *nanus*); lateral convexities unarmed or with very minute granules.

Type Locality.— "Lake" Catemaco, Veracruz, Mexico.

Type Material.— The female holotype, male allotype, and 16 paratypes were taken at the type locality on 1-3-V-1969, from *Bursera*, by D. E. Bright.

The holotype, allotype, and 10 paratypes are in the Canadian National Collection; six paratypes are in my collection.

Pityophthorus melanurus, n. sp.

This species is distinguished from *alni* Blackman by the smaller average size, by the rugose-reticulate pronotal surface, by the coarser pronotal rugae on the posterior half, by the wrinkled elytral surface, and by other characters described below.

Female (?).— Length 2.0 mm (paratypes 1.7-2.0 mm), 3.0 times as long as wide; color black.

Frons broadly convex, a slight transverse impression immediately above epistoma; surface reticulate, punctures fine,

rather sparse; vestiture fine, short, sparse. Antennal club 2.0 times as long as wide, sutures 1 and 2 straight, not marked by grooves or setae on middle half.

Pronotum 1.16 times as long as wide; outline about as in *alni*; anterior margin armed by about 16 rather coarse serrations; longitudinal rugae extending to base as in *alni* except much coarser on disc, surface between asperities and rugae rugose-reticulate, punctures not clearly evident. Vestiture restricted to margins and asperate area.

Elytra 1.8 times as long as wide, 1.6 times as long as pronotum; outline as in *alni*; striae not impressed, moderately to strongly confused, 1 and 2 often distinguishable on posterior half; surface shining, wrinkled, interstitial punctures similar to and largely confused with those of striae. Declivity steep, convex; sculpture as on disc, striae 1 and 2 slightly confused but identifiable, their punctures almost as large as on disc; interstitial punctures not granulate. Vestiture extending to base, similar on disc and declivity; consisting of moderately coarse, rather long striae hair and similar interstitial setae, interstitial setae on declivity slightly longer.

Type Locality.— Five miles or 8 km W San Cristobal de las Casas, Chiapas, Mexico.

Type Material.— The holotype and three paratypes, apparently all females, were taken at the type locality on 3 (type), 5, and 10-V-1969, beating oak, by H. F. Howden.

The holotype and one paratype are in the Canadian National Collection and two paratypes are in my collection.

Araptus gracilens, n. sp.

This species is distinguished from *dentifrons* Wood by the smaller size, by the less strongly impressed frons in both sexes, and by the slightly smaller punctures on the pronotum and elytra.

Male.— Length 1.2 mm (paratypes 1.1-1.3 mm), 3.2 times as long as wide; color brown.

Frons as in *dentifrons* except almost flat, carina and marginal tubercles very slightly smaller.

Pronotum 1.3 times as long as wide; as in *dentifrons* except anterior margin more broadly rounded, punctures slightly smaller.

Elytra 1.8 times as long as wide, 1.5 times as long as pronotum; as in *dentifrons* except stria punctures smaller, more widely spaced.

Female.— Similar to male except frons; frons as in female *dentifrons* except weakly convex, vestiture finer, slightly shorter.

Type Locality.— Four miles or 6 km N Mazatlan, Sinaloa, Mexico.

Type Material.— The male holotype, female allotype, and four paratypes were taken at the type locality on 31-VII-1964, from an active oriole nest, by E. E. Lindquist.

The holotype, allotype, and two paratypes are in the Canadian National Collection; two paratypes are in my collection.